CLAIMS

1. An in-vivo information acquisition apparatus to be inserted into a body to examine a specimen and acquire in-vivo information, the in-vivo information acquisition apparatus comprising:

a specimen-collecting section for collecting a specimen at an examination site in a body cavity;

a specimen-evaluating section for evaluating the specimen collected by the specimen-collecting section and outputting an evaluation result;

a labeling section having identification information unique to the in-vivo information acquisition apparatus;

a communication section for receiving a signal transmitted from outside and for transmitting to the outside the evaluation result output by the specimen-evaluating section; and

a power supply section for supplying electrical power.

2. The in-vivo information acquisition apparatus according to claim 1, wherein

the labeling section is a labeling tag for transmitting the identification information via wireless communication.

3. The in-vivo information acquisition apparatus according

to claim 2, wherein

the labeling tag is an RF-ID.

4. The in-vivo information acquisition apparatus according to claim 1, wherein

the in-vivo information acquisition apparatus includes a power supply control section that controls the supply of power of the power supply section based on the signal when the communication section receives the signal transmitted from the outside.

5. The in-vivo information acquisition apparatus according to claim 1, wherein

the in-vivo information acquisition apparatus includes an indwelling section for fixing to a tissue surface in the body cavity.

6. The in-vivo information acquisition apparatus according to claim 1, wherein

the in-vivo information acquisition apparatus includes an adhesive container for storing a biocompatible adhesive; and

an adhesive release section for releasing the biocompatible adhesive.

7. The in-vivo information acquisition apparatus according

to claim 1, wherein

the power supply section is an externally chargeable power storage section that is supplied with electrical power by transmitting energy from outside the body wirelessly.

8. The in-vivo information acquisition apparatus according to claim 7, wherein

the power storage section is an electrical double-layer capacitor.

9. The in-vivo information acquisition apparatus according to claim 1, wherein

the in-vivo information acquisition apparatus includes a cell enclosure having the specimen-evaluating section;

a shutter for introducing the specimen to the interior of the casing; and

an ion-conducting actuator for controlling the opening and closing of the shutter.

10. The in-vivo information acquisition apparatus according to claim 1, wherein

the specimen-evaluating section includes a photodetector for measuring an optical change of the specimen due to a reaction between the specimen and another substance.

11. The in-vivo information acquisition apparatus according to claim 10, wherein

the specimen-evaluating section includes an illuminating element for emitting illuminating light onto the specimen.

12. The in-vivo information acquisition apparatus according to claim 11, wherein

the illuminating element is a wavelength tunable light source.

13. The in-vivo information acquisition apparatus according to claim 10, wherein

the specimen-evaluating section functions as a blood sensor for detecting the presence of blood.

14. The in-vivo information acquisition apparatus according to claim 10, wherein

the specimen-evaluating section functions as a protein sensor for detecting a particular protein.

15. The in-vivo information acquisition apparatus according to claim 10, wherein

the specimen-evaluating section functions as an enzyme sensor for detecting a particular enzyme.

16. The in-vivo information acquisition apparatus according to claim 10, wherein

the specimen-evaluating section functions as a gene sensor for detecting a particular gene.

17. The in-vivo information acquisition apparatus according to claim 1, wherein

the in-vivo information acquisition apparatus includes an imaging section for acquiring an image of the body cavity.

18. An in-vivo information acquisition apparatus system comprising:

an in-vivo information acquisition apparatus for acquiring in-vivo information at an examination site in a body cavity;

a capsule medical apparatus having a function for storing the in-vivo information acquisition apparatus and releasing the in-vivo information acquisition apparatus at the examination site;

an external antenna arranged outside a body to transmit and receive a signal to and from the in-vivo information acquisition apparatus;

an external apparatus that acquires a signal transmitted by the in-vivo information acquisition apparatus from the external antenna and has an identifying section for

identifying the identification information possessed by a labeling section arranged inside the in-vivo information acquisition apparatus; and

an external control section provided in the external apparatus to transmit a common control signal to a plurality of the in-vivo information acquisition apparatuses.

19. The in-vivo information acquisition apparatus system according to claim 18, wherein

the capsule medical apparatus includes a storage section for storing a plurality of the in-vivo information acquisition apparatuses;

a release unit for releasing the in-vivo information acquisition apparatuses from the storage section to the outside; and

a control section for controlling the release unit.

20. The in-vivo information acquisition apparatus system according to claim 18, wherein

the capsule medical apparatus includes an adjustment mechanism for adjusting the number of in-vivo information acquisition apparatuses to be released.

21. The in-vivo information acquisition apparatus system according to claim 18, wherein

the capsule medical apparatus includes a timer; and

the capsule medical apparatus releases the in-vivo information acquisition apparatus to the outside at a desired time based on time information of the timer.

22. The in-vivo information acquisition apparatus system according to claim 19, wherein

the release unit releases the in-vivo information acquisition apparatuses in a direction substantially perpendicular to a longitudinal direction of the capsule medical apparatus.

23. The in-vivo information acquisition apparatus system according to claim 22, wherein

the release unit includes a disc-shaped rotatable cam that has a projection and a cutout; and

a boundary between the projection and the cutout is S shaped.

24. The in-vivo information acquisition apparatus system according to claim 22, wherein

the release unit includes an electromagnetic solenoid.

25. The in-vivo information acquisition apparatus system according to claim 19, wherein

the storage section includes an electrical connection for supplying electrical power to the in-vivo information acquisition apparatuses.

26. The in-vivo information acquisition apparatus system according to claim 19, wherein

the capsule medical apparatus includes a plurality of the storage sections.

27. The in-vivo information acquisition apparatus system according to claim 18, further comprising:

a position-detecting section provided in at least one of the capsule medical apparatus and the external apparatus to detect a location of the in-vivo information acquisition apparatus in a body, wherein the capsule medical apparatus releases the in-vivo information acquisition apparatus based on the location information of the capsule medical apparatus acquired by the position-detecting section.

28. The in-vivo information acquisition apparatus system according to claim 27, wherein

the position-detecting section includes an imaging section provided in the capsule medical apparatus; and

a first determining section provided in the external apparatus to determine a location of the capsule medical

apparatus based on image information acquired by the imaging section.

29. The in-vivo information acquisition apparatus system according to claim 27, wherein

the position-detecting section includes a wireless communication antenna provided in the capsule medical apparatus; and

a second determining section provided in the external apparatus to determine a location of the capsule medical apparatus based on the intensity of electromagnetic waves transmitted by the wireless communication antenna.

30. The in-vivo information acquisition apparatus system according to claim 27, wherein the position-detecting section includes:

a magnetic-field generating section provided in the capsule medical apparatus;

an external magnetic sensor arranged outside a subject; and

a third determining section provided in the external apparatus to determine the location of the capsule medical apparatus based on a vector of a magnetic field generated by the magnetic-field generating section.

31. The in-vivo information acquisition apparatus system according to claim 27, wherein

the position-detecting section includes a pH sensor provided in the capsule medical apparatus to detect the location based on a pH value detected by the pH sensor.

32. The in-vivo information acquisition apparatus system according to claim 18, wherein

the external control section is a communication control section for controlling the communication section.

33. The in-vivo information acquisition apparatus system according to claim 18, wherein

the external control section is a specimen-evaluation control section for controlling the specimen-evaluating section.